

USSN 09/814,625
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IN THE CLAIMS

Amend claims 12, 13, 22-24 and 27; add new claims 31-32.

Claims 1-11. (Canceled).

¹
Claim ~~12~~ (Currently amended) A process for preparing a hot-melt pressure sensitive adhesive comprising polymerizing polyacrylate precursor monomers in an aqueous dispersion to yield a concentrated aqueous dispersion comprising between ~~68-87%~~ 68% and 87% by weight of the concentrated aqueous dispersion of gel-free, molecularly-dispersed, meltable polyacrylate particles having an at least bimodal size distribution in ~~size ranges~~ the range between 0.5 μ m and 1000 μ m Φ_1 ~~and~~

dewatering the concentrate aqueous dispersion under subatmospheric pressure during kneading and/or extrusion.

²
Claim ~~13~~ (Currently amended) The process according to Claim ~~12~~, wherein the monomers ~~comprises~~ comprise:

- ¹
- a) ~~a total of~~ 60-99.5% by weight, based on ~~a the~~ total weight of monomers, of (meth)acrylic esters with ~~C₄-C₁₂~~ C₄-C₁₂ ester radicals;
 - b) 0-10% by weight, based on the total weight of monomers, of (meth)acrylic acid or methacrylamide, and
 - c) up to 40% by weight, based on the total weight of monomers, of one or more hardening monomers.

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³
Claim ~~14~~. (Previously Presented)

²
The process according to Claim ~~13~~, wherein

the one or more hardening monomers are selected from the group consisting of (meth)acrylic C₁-C₃ esters, vinyl C₁-C₃ esters, styrene and other copolymerizable monomers having functional groups of thermal stability sufficient to survive the process.

⁴
Claim ~~15~~. (Previously Presented)

¹
The process according to Claim ~~12~~, wherein

the polymerizing polyacrylate precursor monomers in aqueous dispersion is conducted in the presence of one or more stabilizers present in said aqueous dispersion in a concentration of up to 4% by weight based on the total weight of the aqueous dispersion, and the one or more stabilizers are selected from the group consisting of water-soluble substances which are stable at a melting temperature of the polyacrylate and nonionic and anionic low-foam emulsifiers.

⁵
Claim ~~16~~. (Previously presented)

⁴
The process according to Claim ~~15~~, wherein

the water-soluble substances which are stable at a melting temperature of the polyacrylate are selected from the group consisting of short-chain polymers which carry amide groups.

⁶
Claim ~~17~~. (Previously Presented)

¹
The process according to Claim ~~12~~, wherein

the polymerizing polyacrylate precursor monomers in aqueous dispersion is conducted in the presence of one or more polyacrylate chain-length-regulating substances present in amounts of up to 10% by weight based on the weight of the polyacrylate.

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~~7~~
Claim ~~18~~. (Previously Presented) The process according to Claim ~~17~~, wherein the one or more polyacrylate chain-length-regulating substances are selected from the group consisting of vinyl ethers, fumaric esters, maleic esters, styrene and hydrophilic rosins.

~~8~~
Claim ~~18~~. (Previously Presented) The process according to Claim ~~12~~, wherein the polymerizing polyacrylate precursor monomers in aqueous dispersion is conducted in the presence of one or more linearly polymerizing, water-insoluble initiators which are soluble in the monomers in amounts of up to 1% by weight based on the weight of the monomers.

~~9~~
Claim ~~20~~. (Previously Presented) The process according to Claim ~~19~~, wherein the initiators are azo initiators.

~~10~~
Claim ~~21~~. (Previously Presented) The process according to Claim ~~12~~, wherein the polyacrylate is soluble without gel in an organic solvent and has a relative viscosity at 25°C in toluene of 1680-5000 and a melting range between 80°C and 170°C.

~~11~~
Claim ~~22~~. (Currently amended) The process according to Claim ~~12~~, which further comprises a) dewatering the concentrated aqueous dispersion to form a homogeneous, molecularly-disperse polyacrylate melt, and b) filming the homogeneous, molecularly-disperse polyacrylate melt to form a film by pressing the homogeneous, molecularly-disperse polyacrylate melt through a slot die, and

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wherein, the homogeneous, molecularly-disperse polyacrylate melt, was polymerized from at least one acrylate monomer comprising an ester group with between 6 and 12 carbon atoms.

¹²
Claim ~~23~~. (Currently amended) The process according to Claim ~~22~~,¹¹ wherein the concentrated aqueous dispersion is dewatered in a kneading device or extruder having a devolatilizing means operating at a temperature between 90-160°C to form the homogeneous, molecularly-disperse polyacrylate melt, or b) a the homogeneous, molecularly-disperse polyacrylate melt is filmed to form a film by pressing the homogeneous, molecularly-disperse polyacrylate melt through a slot die by means of toothed wheel pumps and/or extruder screws.

¹³
Claim ~~24~~. (Currently amended) The process according to Claim ~~22~~,¹¹ wherein prior to dewatering, one or more natural rubber lattices or synthetic rubber lattices are added to the concentrated aqueous dispersion in amounts of up to 70% by weight based on the polyacrylate, and/or before or after the dewatering, one or more inorganic fillers are added to the concentrated aqueous dispersion in amounts up to 40% by weight based on the polyacrylate and/or one or more polyacrylate-compatible plasticizers are added to the concentrated aqueous dispersion in amounts up to 30% by weight based on the polyacrylate.

¹⁴
Claim ~~25~~. (Previously presented) The process according to Claim ~~22~~,¹¹ wherein after dewatering, one or more tackifier resins are added to the concentrated aqueous dispersion in

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amounts up to 50% by weight based on overall polymer or up to 35% by weight based on the polyacrylate.

¹⁵
Claim ~~28~~ (Previously Presented) ¹⁴ The process according to Claim ~~25~~, wherein the one or more tackifier resins are selected from the group consisting of hydrocarbons having aromatic fractions.

¹⁶
Claim ~~27~~ (Currently amended) ¹¹ The process according to Claim ~~22~~, wherein after dewatering, one or more UV photoinitiators are added to the concentrated aqueous dispersion and/or incorporated into the polyacrylate by copolymerization in amounts of up to 2% by weight of the polyacrylate, and/or one or more polyunsaturated (meth)acrylic monomers are incorporated into the polyacrylate by copolymerization in amounts up to 5% by weight of the polyacrylate, and the film is crosslinked by subjecting the film to 2-10 J/cm² UV radiation and/or 10-100 kGy electron beams to yield an insoluble of up to 95% by weight of crosslinked acrylic polymer. *wave energy*

Claim 28. (Previously Presented) The product produced by the process of Claim 12.

Claim 29. (Previously Presented) An adhesive tape comprising a backing and the product according to Claim 28 coated on one or both sides of said backing.

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Claim 30. (Previously Presented) A method of producing an adhesive tape according to Claim 29 comprising:

- a) producing a hot-melt pressure sensitive adhesive according to the process of Claim 12; and
- b) coating a backing on one or both sides thereof with said hot-melt pressure sensitive adhesive.

¹⁷
Claim ~~31~~ (New) The process of claim ~~12~~, wherein at least one of the polyacrylate precursor monomers comprises an ester group an ester group with between 6 and 12 carbon atoms.

Claim 32 (New) Claim 12. A process for preparing a hot-melt pressure sensitive adhesive comprising polymerizing polyacrylate precursor monomers in an aqueous dispersion to yield a concentrated aqueous dispersion comprising molecularly-disperse meltable polyacrylate particles, wherein at least one of the polyacrylate precursor monomers is selected from the group consisting of an acrylate having an ester group of C₄₋₁₂, and a methacrylate having an ester group of C₄₋₁₂.